

Quarterly well monitoring Sampling Plan
Tutu Well Site
U.S. Virgin Islands, St. Thomas

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254290



1. PROJECT NAME: Tutu well site (1D),
St. Thomas, USVI.
2. REQUESTED BY: Luis E. Santos, Response and
Prevention Branch, U.S. EPA
3. DATE REQUESTED: August 18, 1989
4. DATE OF PROJECT INITIATION: May 7, 1990
5. PROJECT OFFICER: Ivan Garcia, TAT/II
6. QUALITY ASSURANCE OFFICER: Anibal Diaz, TAT/II
7. PROJECT DESCRIPTION:

A: OBJECTIVE AND SCOPE:

To conduct a quarterly monitoring program for toluene, benzene, trans 1,2-dichloroethylene (DCE), trichloroethylene (TCE) and tetrachloroethylene (PCE) in wells used as drinking water sources within the Tutu wells site, St. Thomas, USVI.

B: DATA USAGE:

Results will be used to monitor the concentration of contaminants in wells that were used as a drinking water source and to determine whether contaminant levels in said wells are within the standards established by the Virgin Islands' Department of Planning and Natural Resources (DPNR).

C: WELL SAMPLING:

Groundwater samples shall be collected on a quarterly basis (December 1989, February, May, September 1990) from wells in the Tutu area to be analyzed for toluene, benzene, DCE, TCE and PCE using the photovac portable chromatograph.

One set of travel blanks and duplicate samples will be included. Each sample shall be collected in accordance with the procedure set forth in Section 11. All samples will be shipped via the U.S. Postal Service Express Mail to the TAT office in Edison, NJ for photovac analysis.

D: PARAMETER TABLE:

<u>PARAMETER</u>	<u># OF SAMPLES</u>	<u>SAMPLE MATRIX</u>	<u>ANALYTICAL MTD. REF.</u>	<u>SAMPLE PRESERVATION*</u>	<u>HOLD TIME</u>
purgeables	23 per sampling period	aqueous	photovac screening	cool to 4°C	7 d.

8. PROJECT FISCAL INFORMATION:

Sampling equipment and manpower shall be provided by the Technical Assistance Team (TAT) in coordination with USEPA. The DPNR will provide personnel to assist TAT in the sampling process. Samples shall be shipped to the laboratory by TAT for analysis.

9. PROJECT ORGANIZATION AND RESPONSIBILITY:

The following is a list of key project personnel and their corresponding responsibilities:

Luis E. Santos, U.S.EPA	OSC/Project Director/Sampling Operation
Ivan Garcia, TAT/ II	Sampling Operation/ Documentation
Anibal Diaz, TAT/ II	Overall Project Audit, photovac analysis
Leonard Reed, DPNR	DPNR Liason Officer

10. DATA QUALITY REQUIREMENTS AND ASSESSMENTS:

<u>PARAMETER</u>	<u>EST. ACC.</u>	<u>ACC. PROT.</u>	<u>EST. PREC.</u>	<u>PREC. PROT.</u>
purgeables	77-120%	surrogate spike every 10th sample in duplicate using the five compounds	RPD*	duplicates

* Relative Percent Difference not to be greater than 30%

11. SAMPLING PROCEDURES:

Each domestic potable water supply shall be sampled as close as possible to the pumping well. Each well will be pumped for at least three minutes in order to evacuate all of the standing water from the casing prior to collecting the groundwater sample. Previous experience has shown that the wells will be sampled in the manner described below:

<u>Well name</u>	<u>Sampling Procedure</u>
Bryan	Collected at standpipe using a large container and transferred to sample vial.
Rodriguez	Collected at sampling faucet located at well exit.
Harthman crusher	Collected at sampling faucet located at well exit.
Harthman estate	Grab sample from top of well using a large container and transferred to sample vial.
Eglin #1, #2, #3	Collected at sampling faucet located at well exit.
Harvey	Collected at sampling faucet located at well exit.
Steele	Collected at sampling faucet located at well exit.
Mathias	Collected at sampling faucet located at well exit.
Smith	Collected at sampling faucet located at well exit.
Francois	Collected at sampling faucet located at well exit.
Tillet	If well is operational, 55 gals. will be evacuated from well then groundwater is collected in a large container and transferred to sample vial. If well not operational, a grab sample is collected from the top of the casing.
Ramsey	Sample collected from faucet after storage tank.

Four Winds #1	Collected at sampling faucet located at well exit.
VIHA #1, #3	Collected at sampling faucet located at well exit.
Alpha Leonard	Collected at sampling faucet located at well exit.
Demitri	Collected at sampling faucet located at well exit.
Dench	Well voided for 5 minutes using ISCO pump before collecting sample.
Devcon #1, #3	Collected at sampling faucet located at well exit.
Dede	Collected at faucet after storage tank.

These sampling and evacuation procedures will be adhered to where practical, based upon field evaluation. However, due to the passage of Hurricane Hugo, electric power may not be available at all locations. The sampling team will make every effort to sample a given well, if impossible to sample then the team will try to locate and sample nearby wells. Any variances from this procedure will be noted in the sample logs.

All bottles/containers to be utilized for sample collection have been specialty cleaned by the distributor, I-Chem Research, Inc. of California. Sample containers will be thoroughly rinsed with the water to be sampled before actual sample collection. Collected samples, field blanks and trip blanks will be individually labelled in the field and stored in coolers with ice packs for delivery to the laboratory.

12. SAMPLE CUSTODY PROCEDURES:

EPA Chain of Custody procedures will be maintained throughout the monitoring program as per TAT Standard Operating Procedures (SOP) on sample handling, Sampling Container Contract specifications and EPA Laboratories SOP.

13. DOCUMENTATION:

Field data will be entered into a bound notebook. Field notebooks, chain of custody forms, and lab reports will be filed and stored per TAT Document Control System.

14. QUALITY ASSURANCE AND DATA REPORTING:

QA/QC to be furnished by the contracted laboratory in performance of the analysis will consist, at a minimum, of the following measures to ensure accurate data:

1) One set of field blanks consisting of organic free water will be shipped unopened to the laboratory. This blank is to be analyzed in order to ensure that no contamination has occurred.

2) Surrogate standard determinations will be performed on all organic samples and blanks. A minimum of five surrogate spike compounds will be used for each batch of samples collected.

3) The analyst will also furnish the following additional information as warranted:

- a) Copies of all spectral data obtained during performance of analysis. Copies should be signed by the analyst and checked by the Laboratory Manager.
- b) Manual work sheets.
- c) Calibration curves.

The Project and Quality Assurance Officers will be responsible for accurate reporting of data emanating from the sampling report.

15. DATA VALIDATION:

All steps of data generation and handling will be evaluated by the Project Officer and Quality Assurance Officer for compliance with specified requirements.

16. SYSTEM AUDIT:

The QA/QC Officer will review the sampling operations and subsequent analytical data to assure that the QA/QC project plan had been adhered to.